

INFORMATION DISCLOSURE STATEMENT
(Use several sheets, if necessary)APPLICANT:
Lester F. LUDWIG, Jr.FILING DATE
April 16, 1997GROUP
2605

FEB 10 1998

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE |
|----------------------|-----|-----------------|----------|-------------------|-------|----------|-------------|
| <i>Q.E.</i> | P1 | 5,617,539 | 04/01/97 | Ludwig et al. | 348 | 12 | |
| | P2 | 5,579,143 | 11/26/96 | Huber | 359 | 130 | |
| | P3 | 5,566,179 | 10/15/96 | Kobayashi et al. | 370 | 396 | |
| | P4 | 5,563,882 | 10/08/96 | Bruno et al. | 370 | 62 | |
| | P5 | 5,557,442 | 09/17/96 | Huber | 359 | 179 | |
| | P6 | 5,555,244 | 09/10/96 | Gupta et al. | 370 | 397 | |
| | P7 | 5,555,118 | 09/10/96 | Huber | 359 | 125 | |
| | P8 | 5,534,914 | 07/09/96 | Flohr et al. | 379 | 93 | |
| | P9 | 5,528,286 | 06/18/96 | Goolcharan | 348 | 19 | |
| | P10 | 5,528,281 | 06/18/96 | Grady et al. | 348 | 7 | |
| | P11 | 5,512,937 | 04/30/96 | John D. Beierle | 348 | 14 | |
| | P12 | 5,490,247 | 02/06/96 | Tung et al. | 395 | 162 | |
| | P13 | 5,473,679 | 10/05/95 | La Porta et al. | 379 | 220 | |
| | P14 | 5,467,212 | 11/14/95 | Huber | 359 | 168 | |
| | P15 | 5,410,343 | 04/25/95 | Coddington et al. | 348 | 12 | |
| | P16 | 5,375,068 | 12/20/94 | Palmer et al. | 364 | 514 | |
| | P17 | 5,347,305 | 09/1994 | Bush et al. | | | |
| | P18 | 5,283,637 | 02/01/94 | Goolcharan | 348 | 17 | |
| | P19 | 5,247,351 | 09/21/93 | Cho | 358 | 11 | |
| | P20 | 5,247,347 | 09/21/93 | Litteral et al. | 358 | 85 | |
| | P21 | 5,067,018 | 11/19/91 | Sakamoto et al. | 348 | 469 | |
| | P22 | 5,065,396 | 11/12/91 | Castellano et al. | 370 | 84 | |
| | P23 | 5,187,571 | 02/16/93 | Braun et al. | 358 | 85 | |
| | P24 | 5,136,575 | 08/04/92 | Kuroda | 370 | 30 | |
| | P25 | 5,130,793 | 07/14/92 | Bordry et al. | 358 | 86 | |
| | P26 | 5,014,267 | 05/07/91 | Tompkins et al. | 370 | 62 | |
| | P27 | 5,010,399 | 04/23/91 | Goodman et alk. | 358 | 85 | |
| | P28 | 4,847,829 | 07/11/89 | Tompkins et al. | 370 | 62 | |
| | P29 | 4,800,344 | 01/24/89 | Graham | 333 | 25 | |
| | P30 | 4,760,442 | 07/26/88 | O'Connell et al. | 358 | 86 | |
| | P31 | 4,752,940 | 06/21/88 | Graham | 375 | 10 | |
| | P32 | 4,716,585 | 12/29/87 | Tompkins et al. | 370 | 202 | |
| | P33 | 4,710,917 | 12/01/87 | Tompkins et al. | 370 | 62 | |
| | P34 | 4,686,698 | 08/11/87 | Tompkins et al. | 379 | 53 | |
| | P35 | 4,650,929 | 03/17/87 | Boerger et al | 358 | 86 | |
| | P36 | 4,441,180 | 04/03/84 | Schussler | 370 | 3 | |

| | | | | | | | |
|------------|-----|-----------|----------|-------------------|----------------|----------------|----------|
| <i>g.e</i> | P37 | 4,273,963 | 06/16/81 | Seidel | 179 | 168 | 08842745 |
| | P38 | 4,210,927 | 07/01/80 | Yumde et al. | 358 | 12 | |
| | P39 | 4,084,181 | 04/11/78 | Mita et al. | 358 | 12 | |
| | P40 | 4,054,910 | 10/18/77 | Chou et al. | 358 | 86 | |
| | P41 | 4,005,265 | 01/25/77 | Verhoeckx et al. | 358 | 145 | |
| | P42 | 3,974,337 | 08/10/76 | Tatsuzawa | 179 | 2TV | |
| | P43 | 3,873,771 | 03/25/75 | Kleinerman et al. | 179 | 2TV | |
| | P44 | 3,723,653 | 03/27/73 | Tatsuzawa | 179 | 2TV | |
| | P45 | 3,701,849 | 10/31/72 | Stapleton | 179 | 2TV | |
| | P46 | 3,568,100 | 03/02/71 | Tarbos | 333 | 18 | |
| | P47 | 3,530,251 | 09/22/70 | Miyawaki | 179 | 2 | |
| | P48 | 3,519,744 | 07/07/70 | Dorros et al. | 179 | 2 | |
| | P49 | 3,456,206 | 07/15/69 | Kwarytiroff | 330 | 32 | |

FOREIGN PATENT DOCUMENTS

| | | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|------------|-----|-----------------|----------|----------------|-------|----------|-------------|----|
| | | | | | | | YES | NO |
| <i>g.e</i> | F1 | A 2,282,506 | 4/5/95 | GB | | | | |
| | F2 | A 05 268,585 | 1/94 | JP | | | | |
| | F3 | A 0 352,210 | 1/90 | FR | | | | |
| | F4 | A 0 617,560 | 9/28/94 | EP | | | | |
| | F5 | A 0 244,260 | 11/4/87 | EP | | | | |
| | F6 | A 0 354,370 | A1 2/90 | EP | | | | |
| | F7 | A 0 497,022 | A1 8/92 | EP | | | | |
| | F8 | 350,715 2 | A1 2/85 | DE | | | | |
| | F9 | A 352210 | 01/24/90 | EP | | | | |
| | F10 | WO 95/34167 A1 | 12/1995 | W ^o | | | | |
| | F11 | WO 95/13680 A1 | 05/1995 | W ^o | | | | |

OTHER PUBLICATIONS (including Author, Title, Date, Pertinent Pages, Etc.)

| | | |
|------------|-----|---|
| <i>g.e</i> | D1 | Transactions of the Institute of Electronics, Information and Communication Engineers of Japan, vol. E74, no. 9, September 1991, Tokyo, Japan pages 2696-2702 |
| | D2 | Proc. of the 1st International Workshop on Community Networking - Integrated Multimedia Services to the Home - 13-14 July 1994, San Francisco (US), pages 203-209 |
| | D3 | AT&T Visual Solutions Multipoint Control Unit. Product Literature. 1993 |
| | D4 | Chinon America, Inc., Chinon CX-062, Miniature Micro Color CCTV Board Camera. Product Literature, April 1994 |
| | D5 | Communique!. Insoft, Inc. Product Literature. <i>unavailable</i> |
| | D6 | Article, Infoworld, "Up-Start Insoft Storms Conferencing." Dated October 10, 1994 |
| | D7 | Insoft Shared application Resource Environment - Share. Product Literature <i>unavailable</i> |
| | D8 | Insoft Opendve. Your Software Development Bridge for Building Collaborative. Fully-Interperable Multimedia Applications. Product Literature. <i>unavailable</i> |
| | D9 | For-A Company Limited. Operation Manual. Multi-Viewer MV-400 (1st Edition - Rev. 2). <i>unavailable</i> |
| | D10 | For-A Company Limited. MV-40D Multi-Viewer. Product Literature. <i>N/A</i> |

| | |
|-----|---|
| D11 | For-A Company Limited. MV-40C Multi-Viewer. Product Literature. N/A. |
| D12 | Lightwave Systems, Inc., Communiation Systems. Installation Guide Series 4000 Stanalone Twisted Pair Video System. STD. Doc #840-000-01. N/A. |
| D13 | Maxim Integrated Products. Excerpt from Engineering Journal. "New Amplifiers Simply Wideband Techniques". Date Unknown. |
| D14 | Maxim Integrated Products. Wideband Transconductance Amplifiers. Max435/Max436. Product Literature. 0042. Rev. 1, April 1993. |
| D15 | Network Video Technologies. NVT Quality Video Over Ordinary Telephone Wire Rackmount Video Transceiver System. Product Literature. N/A. |
| D16 | Nuts Technologies. Connect 918., P. 3.15 Desktop Videoconferencing Report and P 3.16 Applied Business Telecommunications. Product Literature. N/A. |
| D17 | Picturatel. M-7000 Multipoint Bridge and Control System. Simultaneous. Interactive Videoconferencing Among Three to Sixteen Locatins. Product Literature. N/A. |
| D18 | Picturatel Corporation. Article. Multilocation Teamwork is the Key to Success in the Competitive 90s. N/A. |
| D19 | Tut Systems. Ethernet or 10Baset. Over one pair Wire. Product Literature. N/A. |
| D20 | Tut Systems. Article "Tut Transceivers Target Telcos. ATM. by Reinhardt Krause, Journal Unknown. Date Unknown. |
| D21 | Videoserver, Inc. Videoserver Series 2000 MCU. Product Literature. N/A. |
| D22 | Videoserver, Inc., Videoserver Series 2000 Conference Scheduling and Reservation Application. Product Literature. N/A. |
| D23 | Data Communications, Videoconferencing. Mix-And-Match Videoconferencing, Startup's MCU Allows Videoconferences Among Sites Using Different Vendors' Codecs August 1992. |
| D24 | Videoserver, Inc., Videoserver Series 2000 Multipoint Control Unit. Product Background. The New Standard for Multipoint Conferencing. Product Literature. N/A. |
| D25 | Ameritech Bridged Video Service Press Release. October 11, 1994. |
| D26 | AT&T Accunet Switched Digital Services. Data Networking User Guide. Communications Concert, January 1991. |
| D27 | AT&T Worldwork Network Services. Product Literature. N/A. |
| D28 | MCI Telecommunications Corporation. Product Literature. N/A. |
| D29 | MFS Communications Company, Inc., Business Plan. N/A. |
| D30 | Pacific Bell. A Pacific Telesis Company. "Affordable Multipoint Videoconferencing is Real. California. . ." Product Literature. October 1994. |
| D31 | "Fiber Net to Link Video Production Units: 50 Facilities . . ." Photonics Spectra. Nov. 1991. |
| D32 | "Merrill Tests Video: Brokage Uses Video-Conferencing System Based on Wiltel DS-3 Fiber-Network Service". Communications Week, April 8, 1991. P.*. |
| D33 | Chang, Chen and Messerschmitt. "Video Compositng in the DCT Domain" IEEE Workshop on Visual Signal Processing and Communications. Sept. 1992. PP 138-143. |
| D34 | Lei, Chen and Sun. "Video Bridging Based on H.261 Standard", IEEE Transactions on Circuits and Systems for Video Technology. Vol 4, No. 4, August 1994. |
| D35 | Ludwig. Frontiers in Computer Communications Technology. "A Threaded/Flow Approach to Reconfigurable Distributed Systems & Service Primitives Architectures" ACM Sigom 1987 8/87 |
| D36 | Ludwig & Dunn. Frontiers in Computer Communications Technoogy "Laboratory for Emulation and Study of Integrated and Coordinated Media Communication" ACM Sigcomm Aug. 1987 (1994) |

| | | |
|----|-----|---|
| 96 | D37 | Electronic Engineering Times. A CMP Publication. Issue 821. "DSP Kicks ATM onto voice lines, October 31, 1994. |
| | D38 | San Jose Mercury News. "New System Locates Site of Gunshots". Nov. 1994 and Redwood City to Install High-Tech Gunfire Sensor. |
| | D39 | Yun & Messerschmitt "On Architectures for Video Compositing". Dept. of Electrical Eng. & computer Sciences. Multimedia Systems 1994. |
| | D40 | Boyer & Lukacs. "The Personal Presence System - A Wide Area Network Resource for the Real Time Composition of Multipoint Multimedia Communciations. ACM Multimedia. October 1994. |
| | D41 | Lukacs. "The Personal Presence System - Hardware Architecture." ACM Multimedia October 1994. |
| | D42 | Press Release Broadband Technologies, Inc. , December 6, 1994 |
| | D43 | PC Wook, You May Be Ready Foro ATM, But It isn't Ready For You. Sept. 5, 199 . N/A . |
| | D44 | The Wall Street Journal. "Ameritech Sets Charge of \$2.25 Billion for Old Equipment: Loss is Seen for Year. P. A4, Nov. 29, 1994. |
| | D45 | Datapoint Corp., News Release, "Datapoint Introduces New Line of Network Video Communications Products". Feb. 15, 1994. |
| | D46 | AT&T Multimedia Communicator Dataport 2001, Product Literature. N/A |
| | D47 | CLI, Multipoint 2/2M Controllers, Product Literature. N/A . |
| | D48 | Bell Laboratories, Bell Laboratories Record, Picturephone, pp.137-141, May/June 1969. |
| | D49 | Lake & Pate, "A Network Environment for Studying Multimedia Network Architecture and Control, 1989. 1989 |
| | D50 | Ludwig, L.F., "Integration of CAD/CAE with Multimedia Teleconferencing and Messaging Via Broadband Networks and Shared Resource Servers, Bellcore, Undated. |
| | D51 | Javelin, Video Transmission System, J411, Product Literature. 7/87 |
| | D52 | Televideo, Instructions, Product Literature. N/A . |
| | D53 | Network World, "AT&T Looks to Extend Mail APIs with Voice, Fax, Video". Page 6, Oct. 10, 1994. |
| | D54 | IM & Werner, "Bandwidth-Efficient Digital Transmission up to 155 MB/S Over Unshielded Twisted Pair Wiring, ICC 1993. 1993 . |
| | D55 | Klein, P. "Telekommunikation Von Angesichtzu Angesicht", Siemens AG, 2323 Telecom Report, No. 5, Sept./Okt. 1986, Erlangen, W. Germany. |
| | D56 | Ramanathan, Rangan, Vin, & Kaepner, "Optimal Communication Architectures for Multiconferencing in Distributed Systems", Proceedings of 12th International Conference on Distributed Computing Systems, June 9-12, 1992. |
| | D57 | Maeno, Sakata, Ohmori, Watabe & Fukuoka "Distributed Desktop Conferencing System (Mermaid) Based on Group Communication Architecture" IEICE Transactions, Vol. E74 Sept. 1991. |
| | D58 | Weiss, C., "Desk Top Video Conferencing - An Important Feature of Future Visual Communications", Proceedings of IEEE International Conference on Communications. 1990 |
| | D59 | Audio Engineering Handbook, K. Blair Benson, Ed., McGraw-Hill, 1998, Sect. 4.6. N/A . |
| | D60 | Satellite Source, Mastermind, Product Advertisement. N/A . |
| | D61 | Article, "Instant Network Rides On Phone Lines", Electronic Design, Aug. 6, 1987. |
| | D62 | Sheets, W. & Graf, R. "Build This . . . Carrier Current Receiver", Radio Electronics Feb., 1989. |
| | D63 | Sheets, W. & Graf, R., "Building This . . . Carrier Current Audio Transmitter", Radio Electronics, Jan. 1989. |

| | | |
|----------|-----|---|
| DE | D64 | Teleconcepts, Inc., "Teleconcepts . . . Introduces the "Just Plug It In" Intercom System", Product Literature. N/A |
| | D65 | Windmaster Manufacturing, Remote Extender, Owner's Manual, Product Literature. N/A |
| | D66 | "A Derring-Do Attitude Propels Wiltel . . . And Creative Expansion", Williams Telecommunications Group Inc. Industry Highlights, Steve Polilli, April 1992. |
| EXAMINER | | GEORGE ENG. |
| | | DATE CONSIDERED 3-25-99. |

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609: Draw line through citation if not in conformation and not considered. Include a copy of this form with the next communication to applicant.

INFORMATION DISCLOSURE STATEMENT
(Use several sheets if necessary)

FEB 10 1998

APPLICANT:
Lester F. LUDWIG, Jr.

FILING DATE
June 30, 1997

GROUP
2605

OTHER PUBLICATIONS (including Author, Title, Date, Pertinent Pages, Etc.)

D67

D68

D69

D70

D71

D72

D73

D74

D75

D76

D77

D78

D79

EXAMINER

GEORGE ENH

DATE CONSIDERED

3-25-99

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609: Draw line through citation if not in conformation and not considered. Include a copy of this form with the next communication to applicant.

INFORMATION DISCLOSURE STATEMENT
(Use several sheets if necessary)APPLICANT:
Lester F. LUDWIGFILING DATE
April 16, 1997GROUP
2605

U.S. PATENT DOCUMENTS

| *EXAMINER INITIAL | DOCUMENT NUMBER | DATE | NAME | CLASS | SUBCLASS | FILING DATE |
|----------------------|--------------------|--------|--------|-------|----------|-----------------|
| <i>g.e.</i> | P1 5,440,551 | 8/8/95 | Suzuki | 370 | 60 | January 4, 1994 |
| | P2 | | | | | |
| | P3 | | | | | |
| | P4 | | | | | |
| | P5 | | | | | |
| | P6 | | | | | |
| | P7 | | | | | |
| | P8 | | | | | |
| | P9 | | | | | |
| | P10 | | | | | |
| | P11 | | | | | |

FOREIGN PATENT DOCUMENTS

| | DOCUMENT NUMBER | DATE | COUNTRY | CLASS | SUBCLASS | TRANSLATION | |
|-------------|-----------------|---------|----------------|-------|----------|-------------|----|
| | | | | | | YES | NO |
| <i>g.e.</i> | F1 GB 2287611 A | 9/20/95 | United Kingdom | H4K | KF42 | | x |
| | F2 | | | | | | |
| | F3 | | | | | | |
| | F4 | | | | | | |
| | F5 | | | | | | |

OTHER PUBLICATIONS (including Author, Title, Date, Pertinent Pages, Etc.)

| | | | |
|-------------|----|--|---------|
| <i>g.e.</i> | D1 | An Examiner's Search Report in Patent Application No. GB 9520848.4 | 1/15/96 |
| <i>g.e.</i> | D2 | Commercial Database Record Including the Patent Family for EP 606837 | N/A. |

EXAMINER

GEORGE ENG

DATE CONSIDERED

3-25-99.

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609: Draw line through citation if not in conformation and not considered. Include a copy of this form with the next communication to applicant.